

WHAT IS CLAIMED IS:

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- 5 1. A display device comprising:
a gamma correction circuit;
an image signal processing circuit connected with an output line of said gamma
correction circuit; and
a plurality of photosensors for changing an output voltage of the gamma correction
circuit in accordance with a brightness of a surrounding.
- 10 2. A display device according to claim 1, wherein said display device is a liquid
crystal display device or an electroluminescence display device.
- 15 3. A display device according to claim 1, wherein each of said photosensors has a
photoelectric conversion layer comprising amorphous silicon.
- 20 4. A display device according to claim 1, wherein said display device is incorporated
into an electronic equipment selected from the group consisting of a video camera, a digital
camera, a projector, a head-mounted display, a car navigation system, a car stereo, a personal
computer, and a portable information terminal.
- 25 5. A display device comprising:
a first substrate;
a second substrate fixed to said first substrate;
a gamma correction circuit;
an image signal processing circuit connected with an output line of said gamma
correction circuit; and

a plurality of photosensors, formed on said second substrate, for changing an output voltage of said gamma correction circuit in accordance with a brightness of a surrounding.

5 6. A display device according to claim 5, wherein said display device is a liquid crystal display device or an electroluminescence display device.

7. A display device according to claim 5, wherein each of said photosensors has a photoelectric conversion layer comprising amorphous silicon.

10 8. A display device according to claim 5, wherein said display device is incorporated into an electronic equipment selected from the group consisting of a video camera, a digital camera, a projector, a head-mounted display, a car navigation system, a car stereo, a personal computer, and a portable information terminal.

15 9. A display device comprising:
a plurality of photosensors for detecting a brightness of a surrounding; and
a gamma correction circuit for outputting a voltage for determining a period that a pixel is in a light state in accordance with electrical signals from said plurality of photosensors.

20 10. A display device according to claim 9, wherein said display device is a liquid crystal display device or an electroluminescence display device.

25 11. A display device according to claim 9, wherein each of said photosensors has a photoelectric conversion layer comprising amorphous silicon.

12. A display device according to claim 9, wherein said display device is incorporated into an electronic equipment selected from the group consisting of a video camera, a digital camera, a projector, a head-mounted display, a car navigation system, a car stereo, a personal computer, and a portable information terminal.

13. A display device comprising:

a plurality of photosensors provided on an peripheral portion of a substrate;

a source follower circuit connected with said plurality of photosensors;

a gamma correction circuit connected with said source follower circuit;

an image signal amplifying circuit connected with said gamma correction circuit;

a source signal line driver circuit connected with said image signal amplifying circuit;

and

a pixel portion which is connected with said source signal line driver circuit and formed on said substrate.

14. A display device according to claim 13, wherein said pixel portion has at least a pixel electrode, a liquid crystal layer, and a counter electrode.

15. A display device according to claim 13, wherein said pixel portion has at least a pixel electrode and a light emitting layer.

16. A display device according to claim 13, wherein each of said photosensors has a photoelectric conversion layer comprising amorphous silicon.

17. A display device according to claim 13, wherein said display device is incorporated into an electronic equipment selected from the group consisting of a video camera, a digital camera, a projector, a head-mounted display, a car navigation system, a car stereo, a personal computer, and a portable information terminal.

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18. A display device comprising:

a first substrate;

a second substrate;

a plurality of photosensors which are formed on said second substrate and fixed to an outer portion of said first substrate;

a source follower circuit connected with said plurality of photosensors;

a gamma correction circuit connected with said source follower circuit;

an image signal amplifying circuit connected with said gamma correction circuit;

a source signal line driver circuit connected with said image signal amplifying circuit;

and

a pixel portion which is connected with said source signal line driver circuit and formed on said first substrate.

19. A display device according to claim 18, wherein said pixel portion has at least a pixel electrode, a liquid crystal layer, and a counter electrode.

20. A display device according to claim 18, wherein said pixel portion has at least a pixel electrode and a light emitting layer.

21. A display device according to claim 18, wherein each of said photosensors has a

photoelectric conversion layer comprising amorphous silicon.

22. A display device according to claim 18, wherein said display device is incorporated into an electronic equipment selected from the group consisting of a video camera, a digital camera, a projector, a head-mounted display, a car navigation system, a car stereo, a personal computer, and a portable information terminal.

23. A display device comprising:

a gamma correction circuit:

an image signal processing circuit connected with an output line of said gamma correction circuit; and

a plurality of photosensors for changing an output voltage of the gamma correction circuit in accordance with a brightness of a surrounding,

wherein each of said photosensors has a photoelectric conversion layer comprising amorphous silicon.

24. A display device according to claim 23, wherein said display device is a liquid crystal display device or an electroluminescence display device.

25. A display device according to claim 23, wherein said display device is incorporated into an electronic equipment selected from the group consisting of a video camera, a digital camera, a projector, a head-mounted display, a car navigation system, a car stereo, a personal computer, and a portable information terminal.

26. A method of manufacturing a display device, comprising the steps of:

forming a pixel portion using a thin film transistor on a first substrate;
forming a photosensor on a second substrate; and
fixing the second substrate to said first substrate.

5 27. A method of manufacturing a display device according to claim 26, wherein in the pixel portion at least, a pixel electrode, a liquid crystal layer, and a counter electrode are formed.

10 28. A method of manufacturing a display device according to claim 26, wherein in the pixel portion, at least a pixel electrode and a light emitting layer are formed.

15 29. A method of manufacturing a display device according to claim 26, wherein each of said photosensors has a photoelectric conversion layer comprising amorphous silicon.

20 30. A method of manufacturing a display device according to claim 26, wherein said display device is incorporated into an electronic equipment selected from the group consisting of a video camera, a digital camera, a projector, a head-mounted display, a car navigation system, a car stereo, a personal computer, and a portable information terminal.

25 31. A method of manufacturing a display device, comprising the steps of:
forming a pixel portion, a driver circuit for driving said pixel portion, and a control circuit for controlling a brightness of said pixel portion, using a thin film transistor, on a first substrate;

forming a photosensor on a second substrate; and

fixing said second substrate to said first substrate to electrically connect said control

circuit with said photosensor.

32. A method of manufacturing a display device according to claim 31, wherein in the pixel portion at least, a pixel electrode, a liquid crystal layer, and a counter electrode are formed.

33. A method of manufacturing a display device according to claim 31, wherein in the pixel portion, at least a pixel electrode and a light emitting layer are formed.

34. A method of manufacturing a display device according to claim 31, wherein each of said photosensors has a photoelectric conversion layer comprising amorphous silicon.

35. A method of manufacturing a display device according to claim 31, wherein said display device is incorporated into an electronic equipment selected from the group consisting of a video camera, a digital camera, a projector, a head-mounted display, a car navigation system, a car stereo, a personal computer, and a portable information terminal.